



CASE REPORTS

Bronchial Asthma Due to Almond Pollen Sensitivity

LOWELL F. STEEL, M.D., Chicago

ALMOND NUT EXTRACT has been available for some time for both intradermal and scratch testing for hypersensitivity. In a review of the literature, however, no report of a case of sensitivity to inhaled almond pollen was found. The purpose of the present article is to document a case of almond pollen sensitivity, to disclose a new source of inhalant antigen and to call attention to the distribution of almond acreage according to estimates by county and state totals as most recently compiled in 1956.¹

REPORT OF A CASE

A crop appraiser, a white man 52 years of age, had severe paroxysms of cough, and shortness of breath so severe that for three weeks he had been unable to work. Illness began March 5, 1956, with sensation of having "flu"—general malaise, general aching, severe sneezing, tightness and heaviness in the chest, and dyspnea on slight exertion. As the cough increased, the patient lost 20 pounds in weight. He noted palpitation but no ankle edema and no fever. On one occasion the sputum became blood-streaked. Intermittent rawness of the throat, leg cramping and mild sweats, worse at night, occurred.

The patient had resided five years among almond trees, but his symptoms had not been relieved during a brief frost. He had not been exposed to sprays or insecticides. His home was heated by air-blower. There had been no exposure to new pets, no recent changes in household furnishings, nor any emotional stress. His wife had not changed cosmetics or soaps. Jasmine, bridal wreath, almond trees and forsythia were cultivated outside the patient's bedroom window.

The patient had undergone removal of tuberculous cervical lymph nodes when he was six years old and an operation on the nasal septum at 17 years. Physical examination in 1955 and chest roentgenograms four months before the onset of illness had disclosed no abnormality. The patient had never had allergic response to drugs, food, inhalants or insect stings. He had mild paranasal sinusitis which was not seasonal. There was no history of allergic sensitivity in his family.

Submitted April 8, 1958.

When first observed he was in obvious respiratory distress with pronounced wheezing and musical chest rales audible without the stethoscope. His voice was husky and he had a frequent, non-productive dry cough. Blood pressure was 100/64 mm. of mercury. Forced chest expansion was equal bilaterally. Respirations were 22 per minute with a prolonged expiratory phase. Rales were most audible over the hiluses and the lungs were hyperresonant to percussion. Nasal passages were pale and turgid.

Leukocytes numbered 12,200 per cu. mm. with 15 per cent eosinophils. The fasting total eosinophil count on admission was 1,034 per cu. mm. (normal, 250-350). The corrected Wintrobe sedimentation rate was 33. An intermediate purified protein derivative tuberculin test gave a 2-plus positive response at 48 hours.

Allergic bronchial asthma was diagnosed. The patient was given 60 units of aqueous corticotropin intramuscularly, followed by 5 mg. of prednisolone in oral doses of 5 mg. every 6 hours. Aminophyllin, pyribenzamine cough expectorant, and isoproterenol troches were also administered. The patient responded within 48 hours, and after six days prednisolone was discontinued.

About a month later, while residing at a 5,000-foot altitude, the patient was free of symptoms. The leukocyte count returned to normal and so did the fasting eosinophil count. Antigen skin tests were made according to standard methods⁴ with regional inhalants, but no significant results were obtained. Because almond pollen was suspected, samples of this pollen, collected by bees, were obtained from the Department of Pomology at the University of California College of Agriculture in Davis.* The material was prepared for intradermal and scratch testing by commercial laboratories.[†] Tests were made in October 1956. An initial dilution of 1:10,000 was used, and later dilutions produced the results shown in Table 1. No reaction occurred to tests done with bee antigen only.

Desensitization with extract of almond pollen was begun and the patient remained asymptomatic until the following January, when almond trees were in blossom. Onset of sneezing was followed by rhinorrhea and intermittent periorbital edema. Desensitizing doses were decreased and symptoms were relieved with antihistamine. Three months later the patient was completely asymptomatic and gaining

* Pollen supplied by Professor W. H. Griggs.

† Cutter Laboratories, Berkeley, and Hollister-Stier Laboratories, Los Angeles.

TABLE 1.—Results of Antigen Testing with Bee-Collected Almond Pollen and Anthers

Intradermal Test	Dilution	5 Min-utes	15 Min-utes	30 Min-utes	48-Hour Induration
Pollen	1:1000	2+	2+	2+	2 cm.
Pollen and anthers..	1:1000*	4+	4+	4+	4 cm.
Pollen	1:1000*	4+	4+	4+	1 cm.
Scratch test					
Pollen	1:100	2+		2+	
Pollen and anthers..	1:10	1+		1+	
Pollen	1:20	4+		4+	

*Massive pseudopodia were produced.

weight; and desensitizing doses, by that time in a dilution of 1:10, were discontinued. Symptoms did not recur during the 1958 almond pollination season.

DISCUSSION

The method of obtaining pollen for testing in this case—by bee collection—may be considered in future preparation of regional antigens. The collection was obtained at Davis under well-controlled conditions during a season when other possible allergens—grasses and tree pollens—were dormant. The antigen was highly specific, representing probably no more than two out of the 45 varieties of almond grown in California. A number of other patients with respiratory tract allergic disease due to inhalant pollens have been tested with this material but without response.

Practically all the commercial almond orchards in the United States are in California. They cover approximately 88,000 acres, with Butte County having the largest acreage.

SUMMARY

A case of respiratory tract allergic reaction to almond pollen, successfully treated by desensitizing doses of the pollen, is reported. This is apparently the first reported case of sensitivity to the pollen of almond trees.

Honey bees were used to collect the pollen that was used for testing and desensitization.

314 Salem Street, Chico.

REFERENCES

1. Friesen, H.: Acreage Estimates of California Fruit and Nut Crops, by Counties and State Totals as of 1956, circular of California crop and livestock reporting service, Sacramento, California, June 1957.
2. Griggs, W. H.: Role of Insects in Pollination, Pollination Requirements of Fruits and Nuts, a publication of the College of Agriculture, University of California, Circular 424.
3. Miller, H., M.D., and Baruch, D., Ph.D.: Modern Concepts in Allergy, The Practice of Psychosomatic Medicine as Illustrated in Allergy Text, W. B. Saunders Co., Philadelphia and London, 1956.
4. Sheldon, J., Lovell, R. G.: Technique of Skin Testing, A Manual of Clinical Allergy, 1953.
5. Wood, M. N.: Almond Culture in California, Circular 103, California Agricultural Extension Service, Revised January 1947.

Palmar Intramural Thrombosis In the Ulnar Artery

MORRIS L. GOREN, M.D., Los Angeles

THE PROBLEM of pain in the hand has many origins and may be baffling. The cause may be local or distal. It may be due to trauma, infection or tumors, or to reflex changes from the chest, neck, brachial plexus, shoulder, elbow or wrist.

REPORT OF A CASE

In the present case the patient was a 37-year-old man who sought medical advice on October 7, 1957, because of a "ganglion" that had developed in the hypothenar area of the left hand while he was at work about three weeks previously. As a warehouseman, he frequently pounded with the palm of his left hand over the top of a screwdriver to open cases of merchandise. Soon after the "ganglion" appeared, prickling sensations developed in the palm of the left hand and the left little and ring fingers. In addition the patient noticed a feeling of coldness and pain in those fingers. The pain in the hand increased about a week before he was seen by the author.

The patient had had herniotomy in 1950. He had had no other illnesses, vascular disturbances or neurological disturbances before the onset of pain in the hand.

Upon examination, tenderness, coldness and blanching of the left little and ring fingers was noted, indicating impairment of vascular supply. A fluctuating firm nodular mass was palpated over the hypothenar area of the left hand. Putting pressure on the midpalmar area caused pain and tingling in the left little and ring fingers. Sensation to pinprick and touch was unimpaired. No evidence of pathologic change in the bones or joints of the left hand was seen in x-ray films.

In view of the coldness and blanching of the ring and little fingers of the hand, ulnar nerve block to remove any nerve irritation was done by injecting 1 per cent procaine solution into the ulnar notch at the elbow. This procedure did not alleviate the vasospastic blanching and coldness of the fingers, although there was some diminution of sensation. Five cubic centimeters of 1 per cent procaine solution was also injected in the tender area in the palm, without improvement in the coldness and blanching of the skin of the ring and little fingers. The next day a cervical sympathetic nerve block was carried out by injecting 30 cc. of 1 per cent procaine solution. Enophthalmos and dryness of the skin on the left side of the face occurred immediately, and there was an increase in the temperature of the left upper extremity and fingers, except for the little and ring fingers, which were only partially improved.

Presented before the Section on Orthopedics at the 87th Annual Session of the California Medical Association, Los Angeles, April 27 to 30, 1958.